

## CLAIMS

1. A photosensitive resin film in an uncured state, comprising:

(A) an alkali-soluble copolymer comprising:

5 (a) constituent units derived from  $\alpha$ -methyl-p-hydroxystyrene, in amounts of 1 to 30% by weight,

(b) constituent units derived from a radical polymerizable compound having a carboxyl group, in amounts of 5 to 20% by weight,

10 (c) constituent units derived from an acrylic acid aliphatic ester, in amounts of 20 to 40% by weight, and

(d) constituent units derived from a radical polymerizable compound having a polycyclic aliphatic  
15 group, in amounts of 30 to 60% by weight,

(B) a compound having at least one ethylenically unsaturated double bond, and

(C) a radiation-sensitive radical polymerization initiator by the use of which a coating film having a dry  
20 film thickness of 70  $\mu\text{m}$  in an uncured state has a 365 nm radiation transmittance of not less than 10% and a 405 nm radiation transmittance of not less than 60%,

wherein the radiation-sensitive radical polymerization initiator (C) is contained in an amount of

20 to 40 parts by weight based on 100 parts by weight of the component (A), and a dry film thickness of said photosensitive resin film is not less than 50  $\mu\text{m}$ .

- 5           2.    The photosensitive resin film as claimed in claim 1, wherein the compound (B) having at least one ethylenically unsaturated double bond is contained in an amount of 30 to 80 parts by weight based on 100 parts by weight of the alkali-soluble copolymer (A).

10

          3.    The photosensitive resin film as claimed in claim 1, wherein the alkali-soluble copolymer (A) has a glass transition temperature of not lower than 60°C.

- 15           4.    The photosensitive resin film as claimed in claim 1, wherein the constituent units (d) derived from a radical polymerizable compound having a polycyclic aliphatic group, which constitute the alkali-soluble copolymer (A), are derived from isobornyl (meth)acrylate  
20   and tricyclo[5.2.1.0<sup>2,6</sup>]decanyl (meth)acrylate.

          5.    The photosensitive resin film as claimed in any one of claims 1 to 4, wherein the radiation-sensitive radical polymerization initiator (C) comprises (e) 2,2-

dimethoxy-1,2-diphenylethane-1-one and (f) 2,4,6-trimethylbenzoyldiphenylphosphine oxide, and

the 2,2-dimethoxy-1,2-diphenylethane-1-one (e) is contained in an amount of 17 to 30 parts by weight and  
5 the 2,4,6-trimethylbenzoyldiphenylphosphine oxide (f) is contained in an amount of 3 to 10 parts by weight, based on 100 parts by weight of the alkali-soluble copolymer (A).

10 6. A cured film formed by photo-curing a photosensitive resin film in an uncured state, said photosensitive resin film comprising:

(A) an alkali-soluble copolymer comprising:

(a) constituent units derived from  $\alpha$ -methyl-p-  
15 hydroxystyrene, in amounts of 1 to 30% by weight,

(b) constituent units derived from a radical polymerizable compound having a carboxyl group, in amounts of 5 to 20% by weight,

(c) constituent units derived from an acrylic  
20 acid aliphatic ester, in amounts of 20 to 40% by weight, and

(d) constituent units derived from a radical polymerizable compound having a polycyclic aliphatic group, in amounts of 30 to 60% by weight,

(B) a compound having at least one ethylenically unsaturated double bond, and

(C) a radiation-sensitive radical polymerization initiator by the use of which a coating film having a dry  
5 film thickness of 70  $\mu\text{m}$  in an uncured state has a 365 nm radiation transmittance of not less than 10% and a 405 nm radiation transmittance of not less than 60%,

in said photosensitive resin film, the radiation-sensitive radical polymerization initiator (C) being  
10 contained in an amount of 20 to 40 parts by weight based on 100 parts by weight of the component (A), and a dry film thickness of said photosensitive resin film being not less than 50  $\mu\text{m}$ .